

FIG. 1

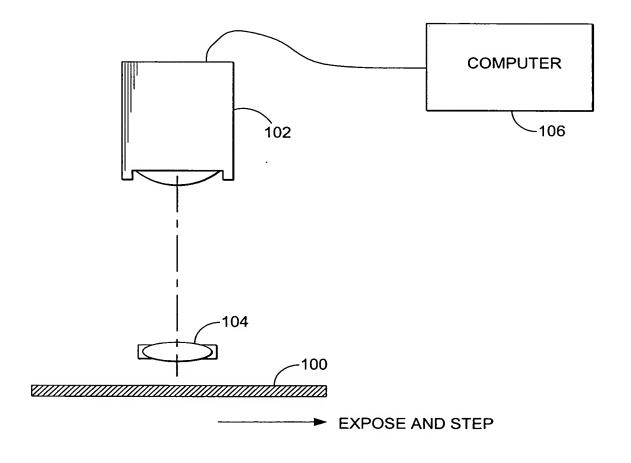
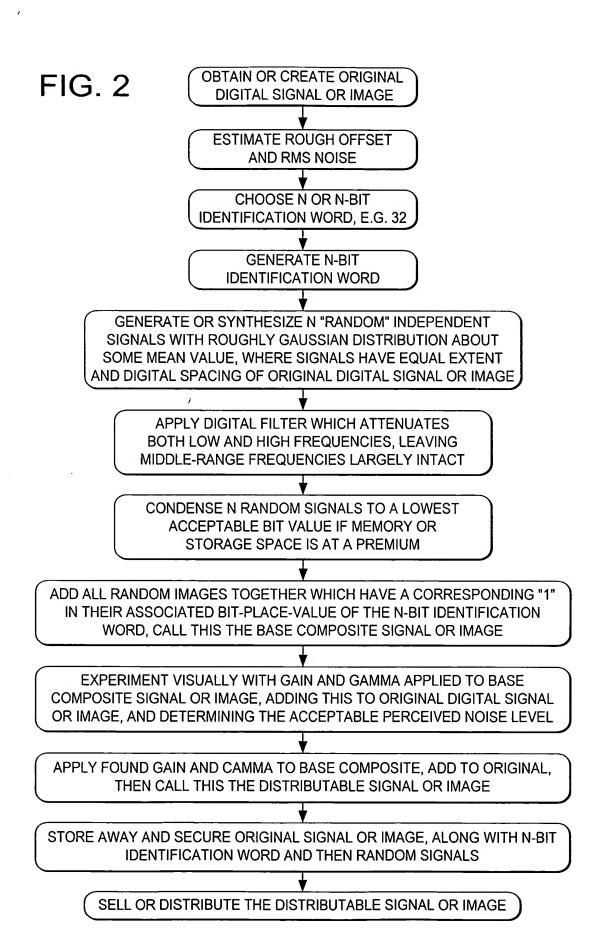


FIG. 4



**OBTAIN DIGITAL OR NON-DIGITAL COPY** OF SUSPECT SIGNAL OR IMAGE FIG. 3 DIGITIZE IF NOT ALREADY DIGITAL CUT AND MASK PORTION OF SIGNAL OR IMAGE BELIEVED TO BE SUSPECT (ONLY IF ENTIRE SIGNAL OR IMAGE IS NOT SUSPECT) PROCURE ORIGINAL DIGITAL SIGNAL OR IMAGE AND CUT AND MASK TO ROUGHLY THE SAME LOCATION OR SEQUENCE VISUALLY RESCALE AND REGISTER THE CUT-OUT SUSPECT SIGNAL TO THE CUT-OUT ORIGINAL SIGNAL RUN THROUGH SEARCH PROGRAM WITH MEAN SQUARED ERROR AS CRITERIA AND X OFFSET, Y OFFSET, AND SCALE AS THE THREE VARIABLES APPLY X OFFSET, Y OFFSET, AND SCALE TO CUT-OUT SUSPECT, THEN RESAMPLE ONTO EXACT GRID AND CUT-OUT OF ORIGINAL SIGNAL RUN THROUGH SEARCH PROGRAM WITH MEAN SQUARED ERROR AS CRITERIA AND DC OFFSET, GAIN, AND GAMMA AS THE THREE VARIABLES; APPLY TO SUSPECT SUBTRACT ORIGINAL FROM SUSPECT. GIVING DIFFERENCE SIGNAL OR IMAGE STEP THROUGH ALL N RANDOM INDEPENDENT SIGNALS, MASKED AS ORIGINAL AND CROSS-CORRELATED WITH DIFFERENCE SIGNAL IN IMMEDIATE NEIGHBORHOOD OF REGISTRATION POINTS FIND 0 AND 1 LEVEL BY AVERAGING FIRST FOUR 0101 CODE VALUES ASSIGN EITHER A 0 OR A 1 TO EACH CROSS-CORRELATION RESULT DEPENDING ON PROXIMITY TO THE AVERAGES OF PREVIOUS STEP CHECK RESULT AGAINST SECURED IDENTIFICATION NUMBER PROSECUTE IF IT MATCHES? OR AT LEAST SEND A NASTY LETTER DEMANDING RECOMPENSE

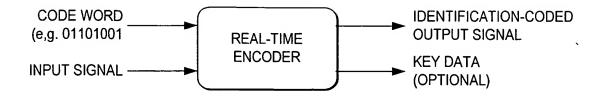


FIG. 5

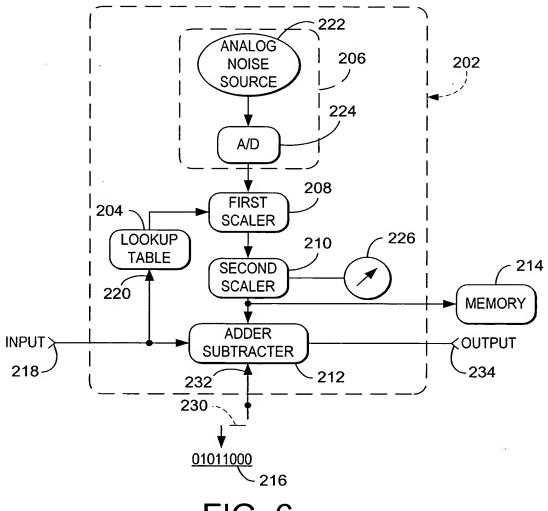
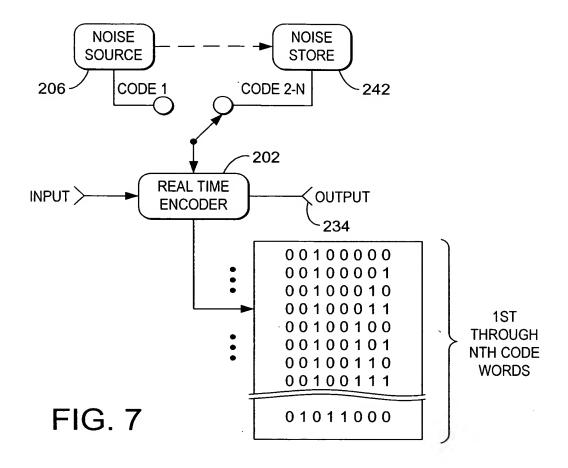


FIG. 6



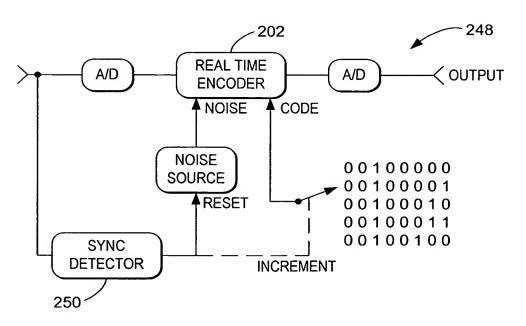
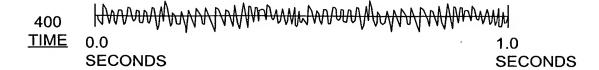
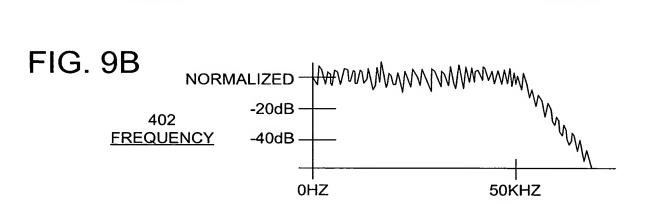
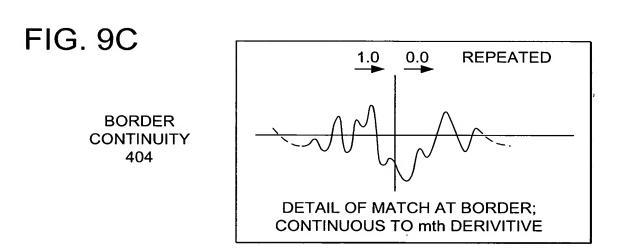


FIG. 8

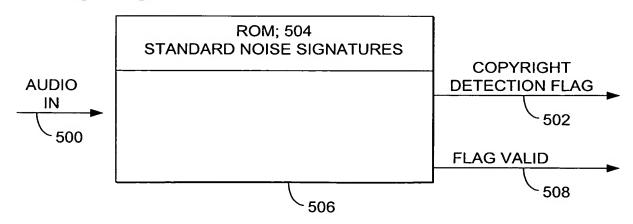
# FIG. 9A

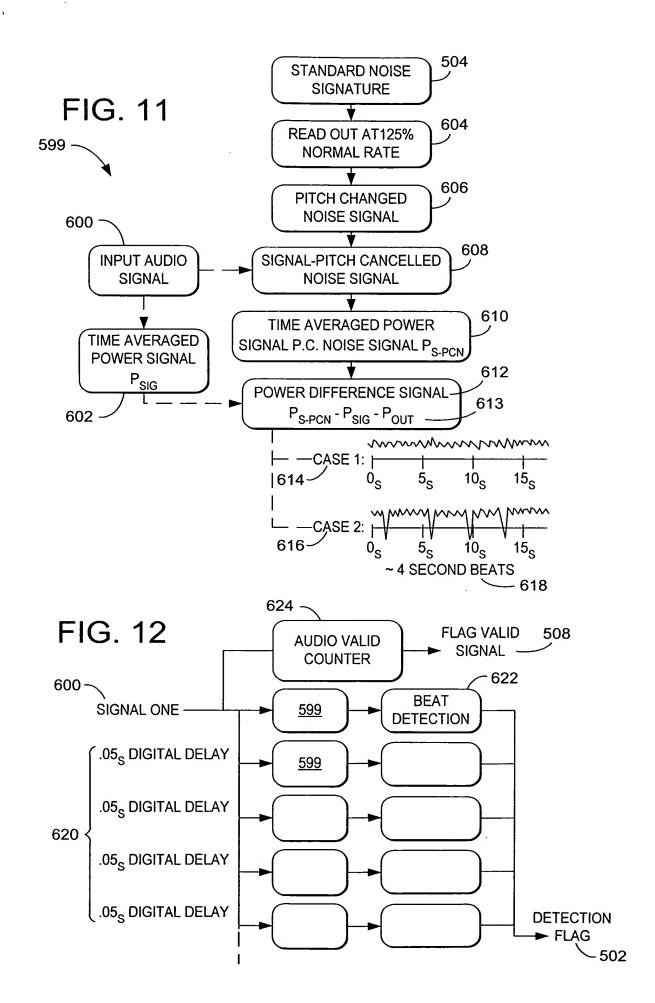


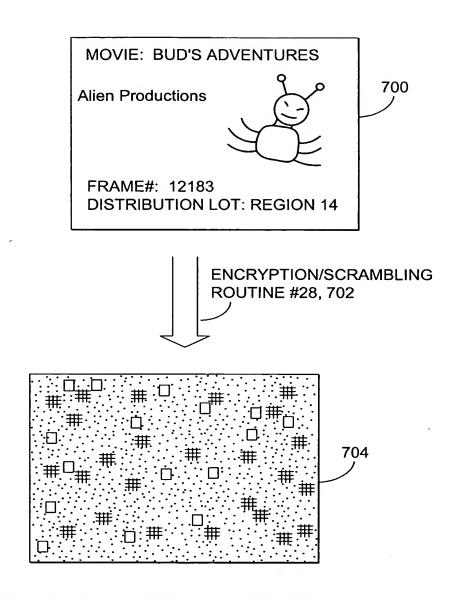




# FIG. 10







PSEUDO-RANDOM MASTER SNOWY IMAGE (SCALED DOWN AND ADDED TO FRAME 12183)

FIG. 13

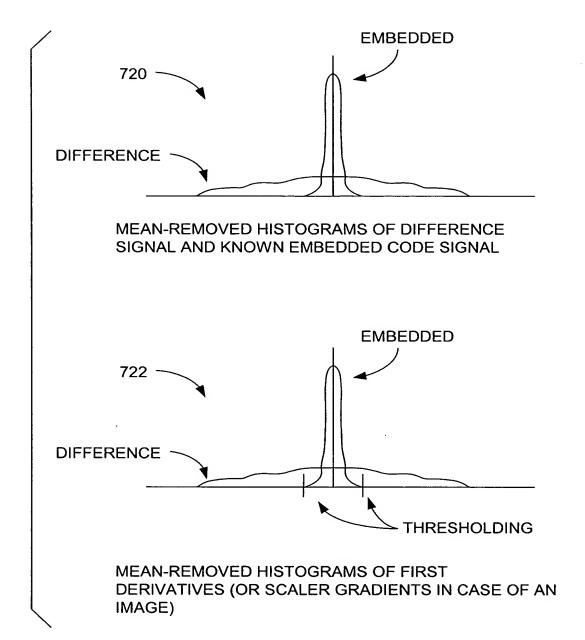


FIG. 14

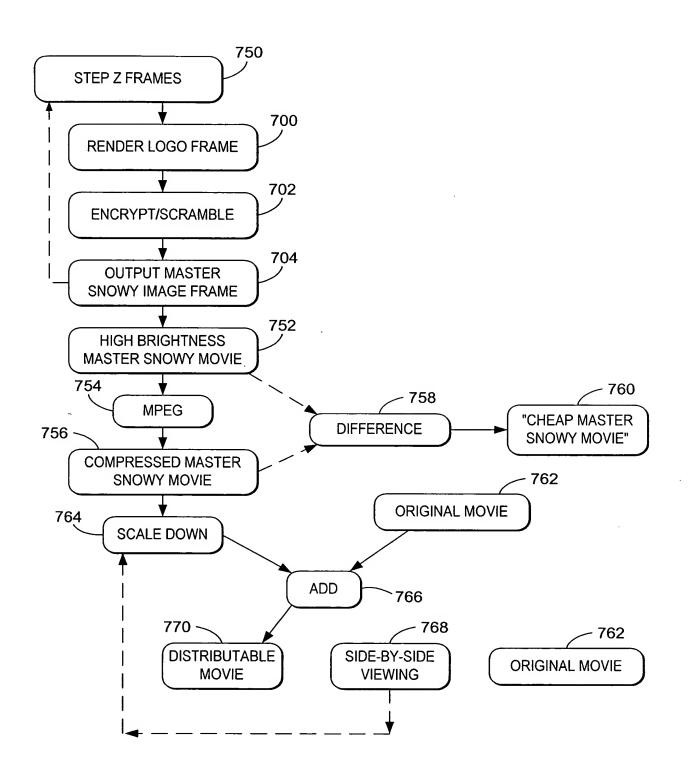
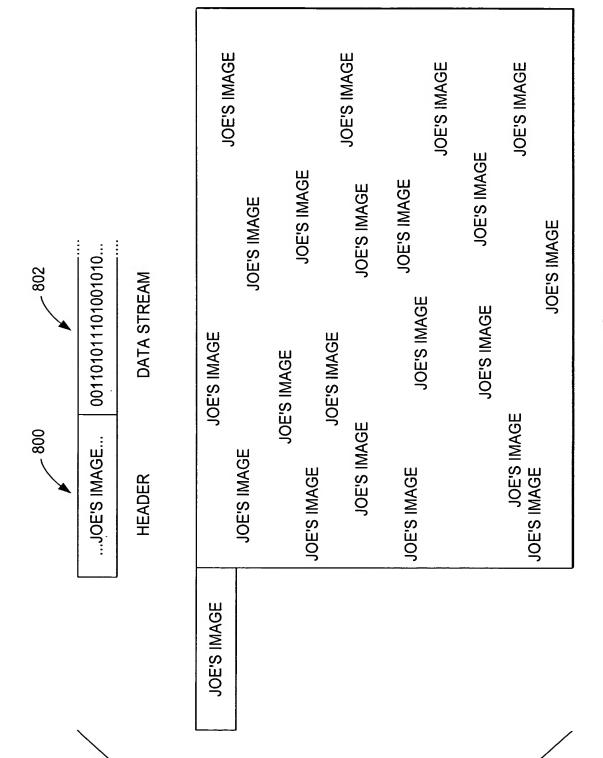


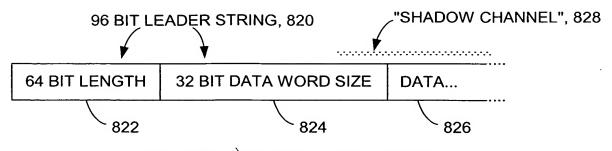
FIG. 15



) a

1.3 1

FIG. 16



UNIVERSAL EMPIRICAL DATA FORMAT

FIG. 17

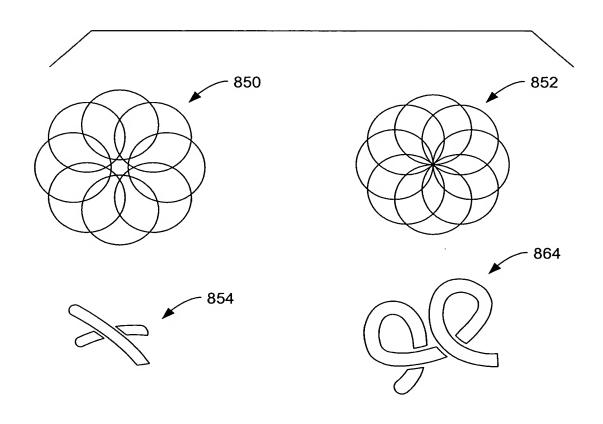
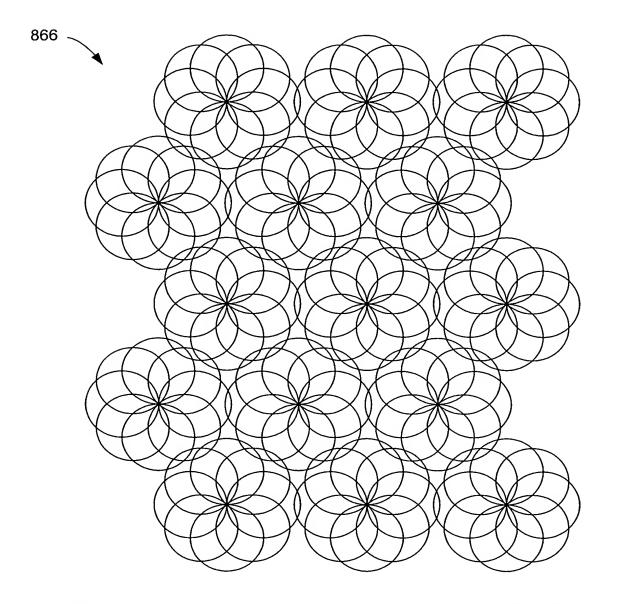


FIG. 18



QUEST FOR MOSAICED KNOT PATTERNS WHICH "COVER" AND ARE COEXTENSIVE WITH ORIGINAL IMAGE; ALL ELEMENTAL KNOT PATTERNS CAN CONVEY THE SAME INFORMATION, SUCH AS A SIGNATURE, OR EACH CAN CONVEY A NEW MESSAGE IN A STEGANOGAPHIC SENSE

FIG. 19

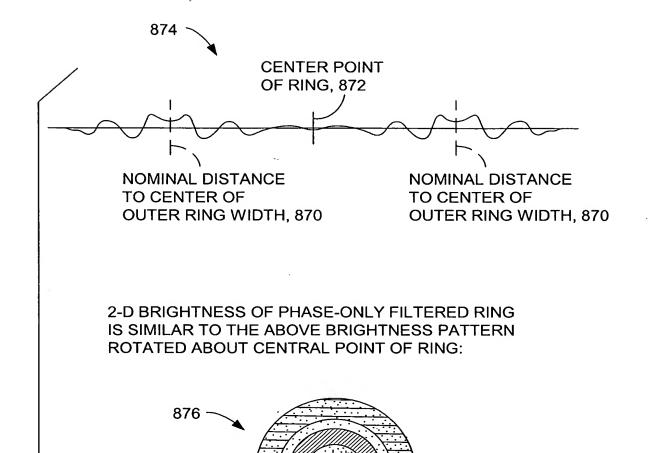


FIG. 20

900 C 2C C
2C 4C 2C
C 2C C

WHERE C = 1/16

ELEMENTARY BUMP (DEFINED GROUPING OF PIXELS WITH WEIGHT VALUES)

FIG. 21A

				<u>.</u>							į
:	2	3	4		5		6	7		0	<u>_</u>
••••											
••••	6	7	0		1		2	3		4	
				С	2C	С					
	2	3	4	2C	4C	2C	6	7		0	F
				С	2C	С					
	6	7	0		1		2	3	,	4	
- 2											

EXAMPLE OF HOW MANY ELEMENTARY BUMPS, 900, WOULD BE ASSIGNED LOCATIONS IN AN IMAGE, AND THOSE LOCATIONS WOULD BE ASSOCIATED WITH A CORRESPONDING BIT PLANE IN THE N-BIT WORD, HERE TAKEN AS N=8 WITH INDEXES OF 0-7. ONE LOCATION, ASSOCIATED WITH BIT PLANE "5", HAS THE OVERLAY OF THE BUMP PROFILE DEPICTED.

FIG. 21B

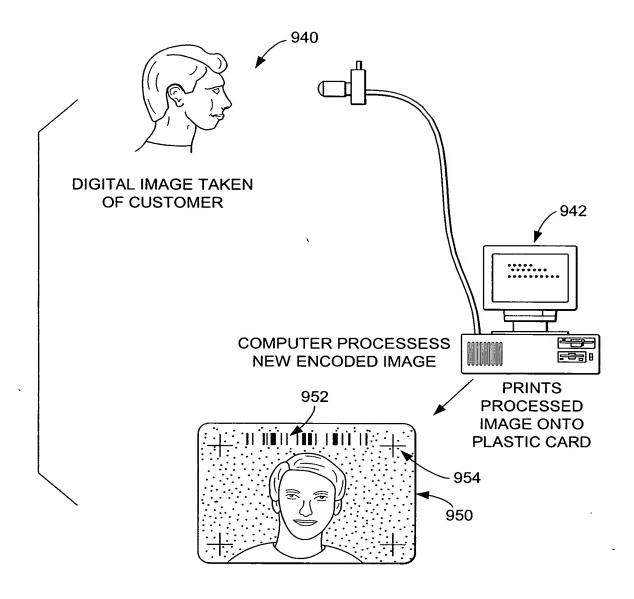
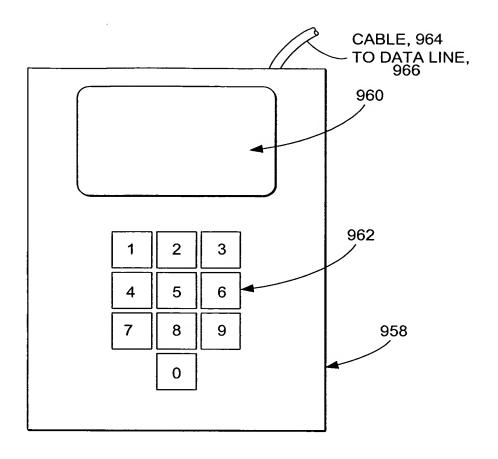
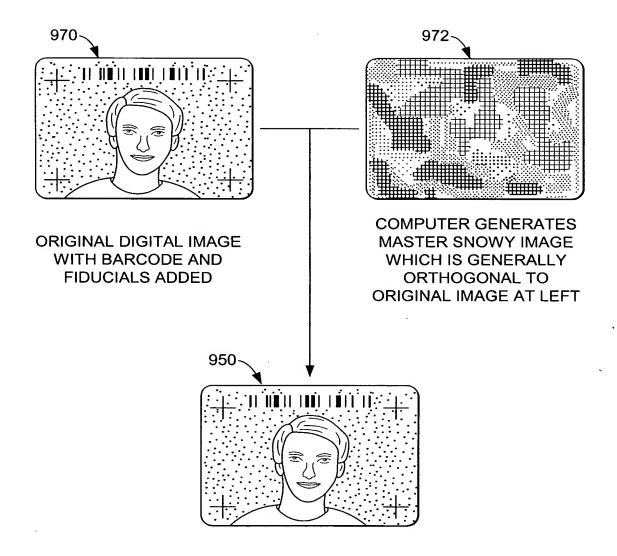


FIG. 22



CONTAINS RUDIMENTARY OPTICAL SCANNER, MEMORY BUFFERS, COMMUNICATIONS DEVICES, AND MICROPROCESSOR

CONSUMER MERELY PLACES CARD INTO WINDOW AND CAN, AT THEIR PREARRANGED OPTION, EITHER TYPE IN A PERSONAL IDENTIFICATION NUMBER (PIN, FOR ADDED SECURITY) OR NOT. THE TRANSACTION IS APPROVED OR DISAPPROVED WITHIN SECONDS.



COMBINED TO FORM PERSONAL CASH CARD

FIG. 24

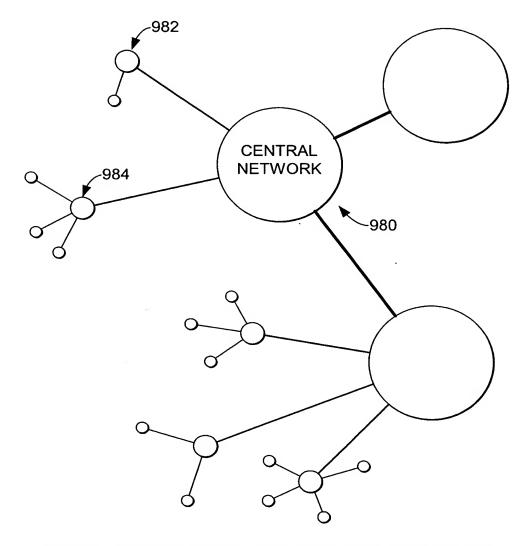
# TYPICAL TRANSACTION STEPS

- READER SCANS IMAGE ON CARD, STORES IN MEMORY, EXTRACTS PERSON'S ID 4. ح
  - OPTIONAL: USER KEYS IN PIN NUMBER
- READER CALLS CENTRAL ACCOUNT DATA NETWORK, HANDSHAKES က
- READER SENDS ID, (PIN), MERCHANT INFORMATION, AND REQUESTED
  - **IRANSACTION AMOUNT TO CENTRAL NETWORK**
- IF OK, CENTRAL NETWORK GENERATES TWENTY-FOUR SETS OF SIXTEEN DISTINCT CENTRAL NETWORK VERIFIES ID, PIN, MERCHANT INFO, AND ACCOUNT BALANCE တ် တ
  - RANDOM NUMBERS, WHERE THE RANDOM NUMBERS ARE INDEXES TO A SET OF
- 64K ORTHOGONAL SPATIAL PATTERNS
- CENTRAL NETWORK TRANSMITS FIRST OK, AND THE SETS OF RANDOM NUMBERS READER STEPS THROUGH THE TWENTY-FOUR SETS
- READER ADDS TOGETHER SET OF ORTHOGONAL PATTERNS 8A. 8B.

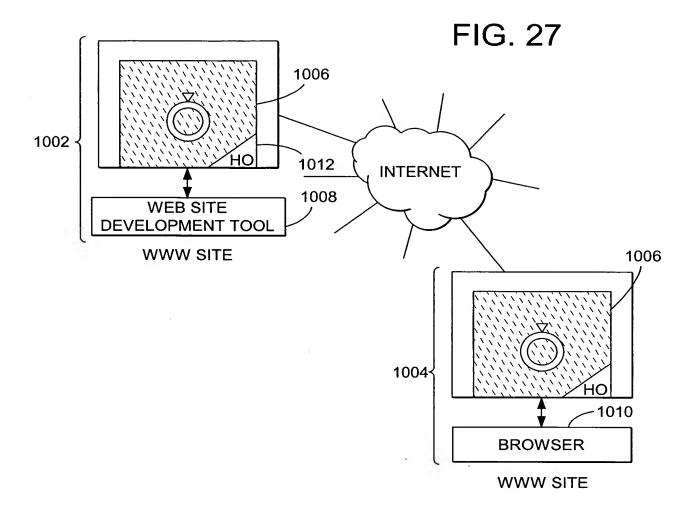
 $\infty$ 

- READER TRANSMITS THE TWENTY-FOUR DOT PRODUCT RESULTS TO CENTRAL NETWORK READER PERFORMS DOT PRODUCT OF RESULTANT PATTERN AND CARD SCAN, STORES RESULT
  - CENTRAL NETWORK CHECKS RESULTS AGAINST MASTER
    - CENTRAL NETWORK SENDS FINAL APPROVAL OR DENIAL
- CENTRAL NETWORK DEBITS MERCHANT ACCOUNT, CREDITS CARD ACCOUNT

### THE NEGLIGIBLE-FRAUD CASH CARD SYSTEM



A BASIC FOUNDATION OF THE CASH CARD SYSTEM IS A 24-HOUR INFORMATION NETWORK, WHERE BOTH THE STATIONS WHICH CREATE THE PPHYSICAL CASH CARDS, 950, AND THE POINT-OF-SALES, 984, ARE ALL HOOKED UP TO THE SAME NETWORK CONTINUOUSLY



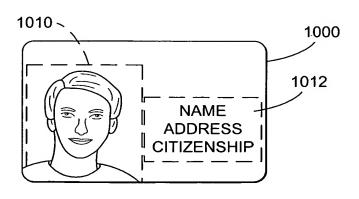


FIG. 28

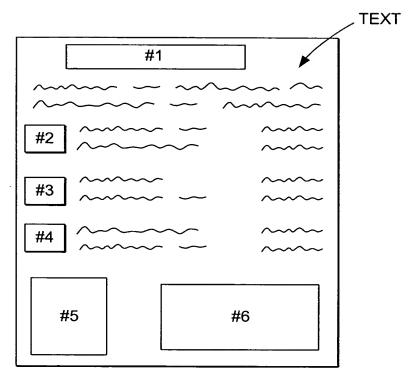


FIG. 27A

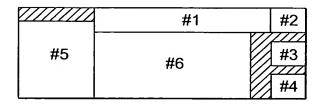
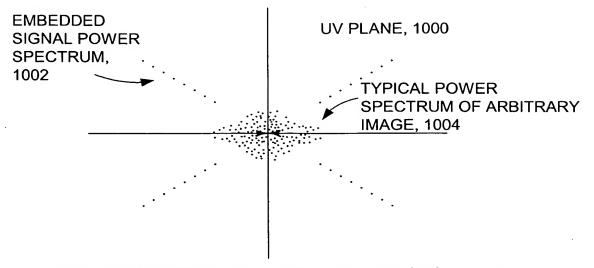
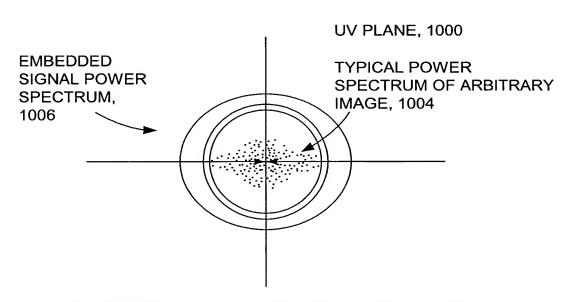


FIG. 27B



NON-HARMONIC SPATIAL FREQUENCIES ALONG THE 45 DEGREE AXES, GIVING RISE TO A WEAVE-LIKE CROSS-HATCHING PATTERN IN THE SPATIAL DOMAIN

FIG. 29



NON-HARMONIC CONCENTRIC CIRCLES IN UV PLANE, WHERE PHASE HOPS QUASI-RANDOMLY ALONG EACH CIRCLE, GIVING RISE TO PSEUDO RANDOM LOOKING PATTERNS IN THE SPATIAL DOMAIN

FIG. 30

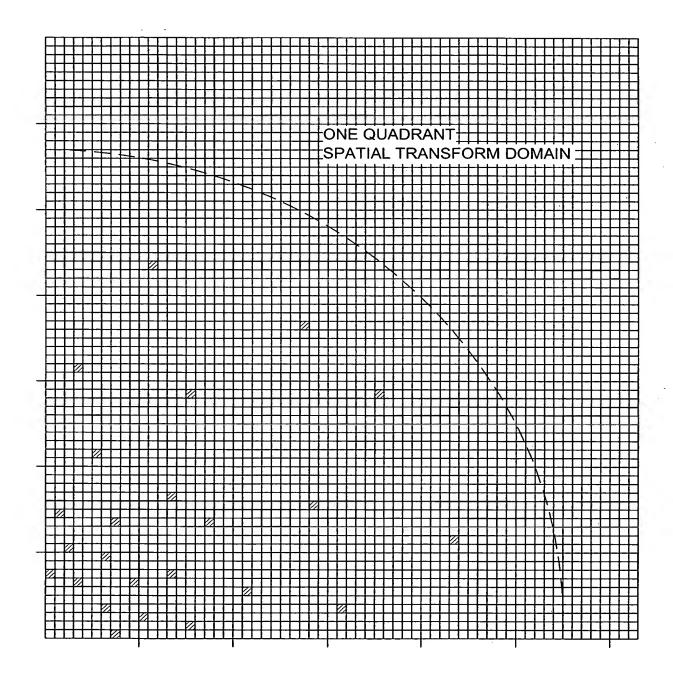
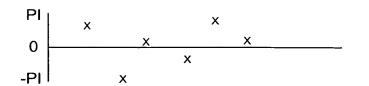


FIG. 29A



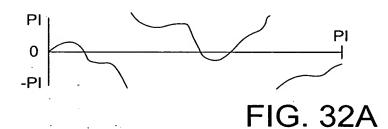
PHASE OF SPATIAL FREQUENCIES ALONG FORWARD 45 DEGREE AXES, 1008

**FIG. 31A** 

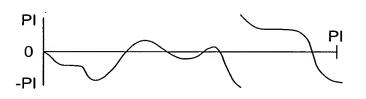


PHASE OF SPATIAL FREQUENCIES ALONG BACKWARD 45 DEGREE AXES, 1010

FIG. 31B

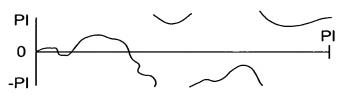


PHASE OF SPATIAL FREQUENCIES ALONG FIRST CONCENTRIC RING, 1012



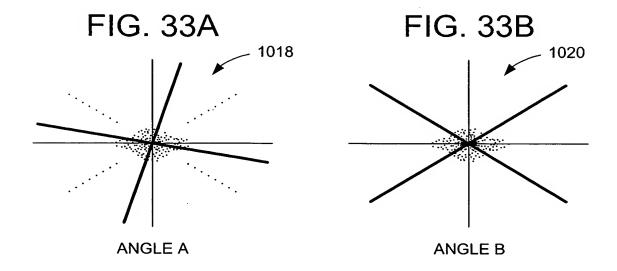
PHASE OF SPATIAL FREQUENCIES ALONG SECOND CONCENTRIC RING, 1014

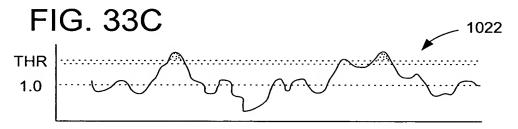
FIG. 32B



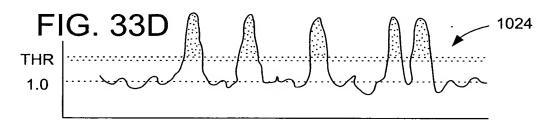
PHASE OF SPATIAL FREQUENCIES ALONG THIRD CONCENTRIC RING, 1016

FIG. 32C

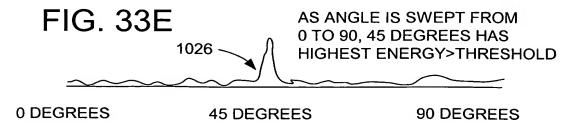


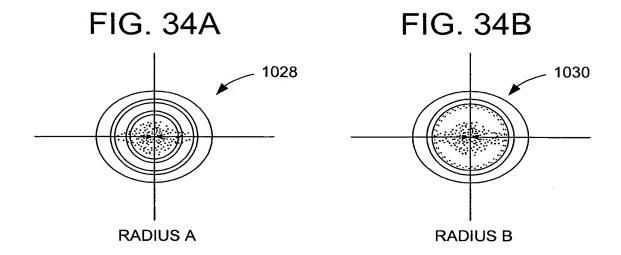


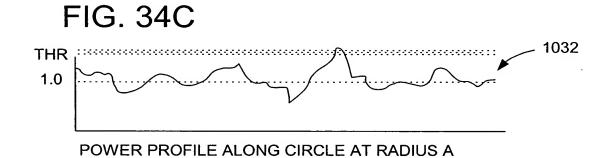
POWER PROFILE ALONG ANGLE A, AS NORMALIZED BY ITS OWN MOVING AVERAGE; ONLY A MINIMAL AMOUNT EXCEEDS THRESHOLD, GIVING A SMALL INTEGRATED VALUE



POWER PROFILE ALONG ANGLE B, AS NORMALIZED BY ITS OWN MOVING AVERAGE; THIS FINDS STRONG ENERGY ABOVE THE THRESHOLD







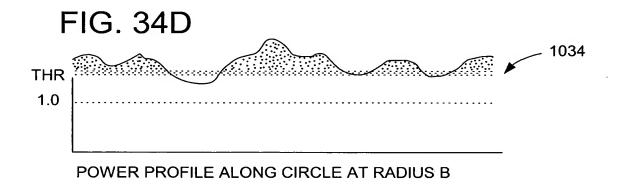
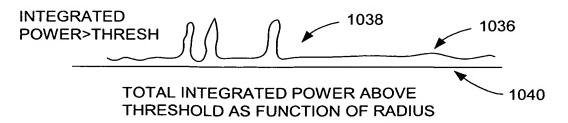
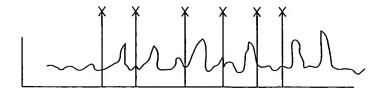


FIG. 34E

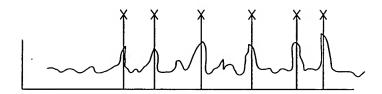


## FIG. 35A

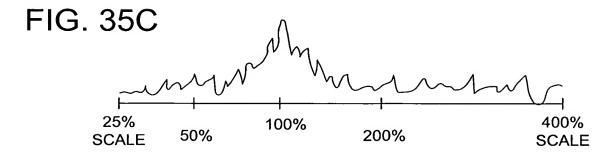


SCALE = A: ADD LL POWER VALUES AT THE "KNOWN" FREQUENCIES", 1042

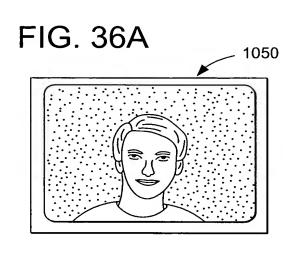
### FIG. 35B



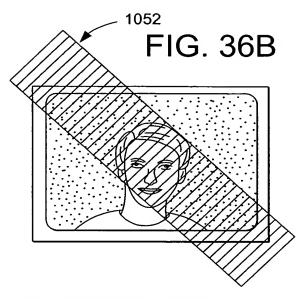
SCALE = B: ADD LL POWER VALUES AT THE "KNOWN" FREQUENCIES", 1044



"SCALED-KERNEL" BASED MATCHED FILTER; PEAK IS WHERE THE SCALE OF THE SUBLIMINAL GRID WAS FOUND, 1046



ARBITRARY ORIGINAL IMAGE
IN WHICH SUBLIMINAL GRATICULES
MAY HAVE BEEN PLACED



"COLUMN SCAN" IS APPLIED ALONG A GIVEN ANGLE THROUGH THE CENTER OF THE IMAGE

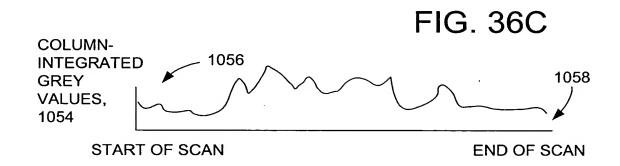


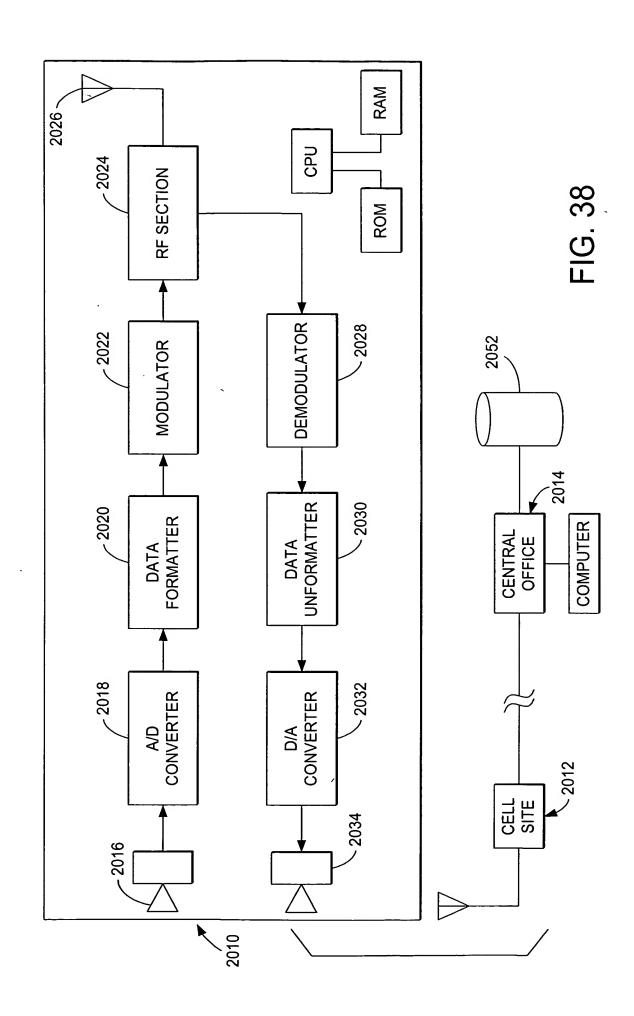
FIG. 36D

MAGNITUDE OF FOURIER TRANSFORM OF SCAN DATA

### PROCESS STEPS

- 1. SCAN IN PHOTOGRAPH
- 2. 2D FFT
- GENERATE 2D POWER SPEÇTRUM, FILTER WITH E.G. 3X3 BLURRING KERNEL
- 4, STEP ANGELS FROM 0 DEGREES THROUGH 90 (1/2 DEG)
- 5. GENERATE NORMALIZED VECTOR, WITH POWER VALUE AS NUMERATOR, AND MOVING AVERAGED POWER VALUE AS DENOMINATOR
- 6. INTEGRATE VALUES AS SOME THRESHOLD, GIVING A SINGLE INTEGRATED VALUE FOR THIS ANGLE
- 7. END STEP ON ANGLES
- 8. FIND TOP ONE OR TWO OR THREE "PEAKS" FROM THE ANGLES IN LOOP 4, THEN FOR EACH PEAK...
- 9. STEP SCALE FROM 25% TO 400%, STEP ~ 1.01
- 10. ADD THE NORMALIZED POWER VALUES CORRESPONDING TO THE 'N' SCALED FREQUENCIES OF STANDARD
- 11. KEEP TRACK OF HIGHEST VALUE IN LOOP
- 12. END LOOP 9 AND 8, DETERMINE HIGHEST VALUE
- 13. ROTATION AND SCALE NOW FOUND
- 14. PERFORM TRADITIONAL MATCHED FILTER TO FIND EXACT SPATIAL OFFSET
- 15. PERFORM ANY "FINE TUNNING" TO PRECISELY DETERMINE ROTATION, SCALE, OFFSET

FIG. 37



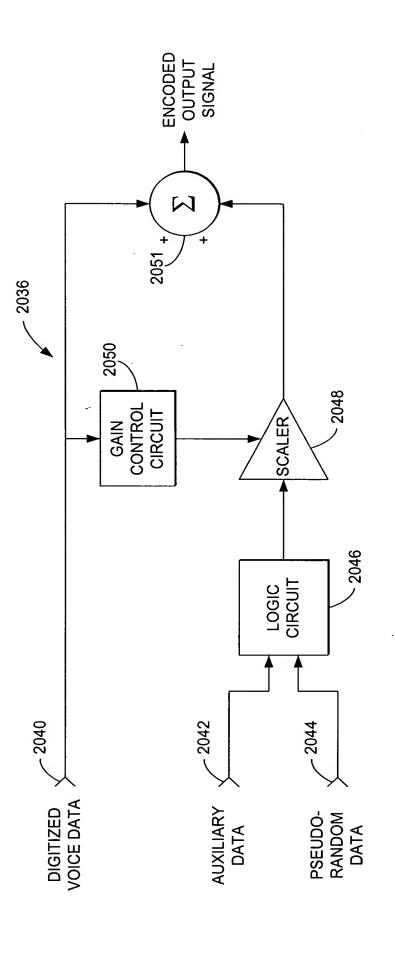
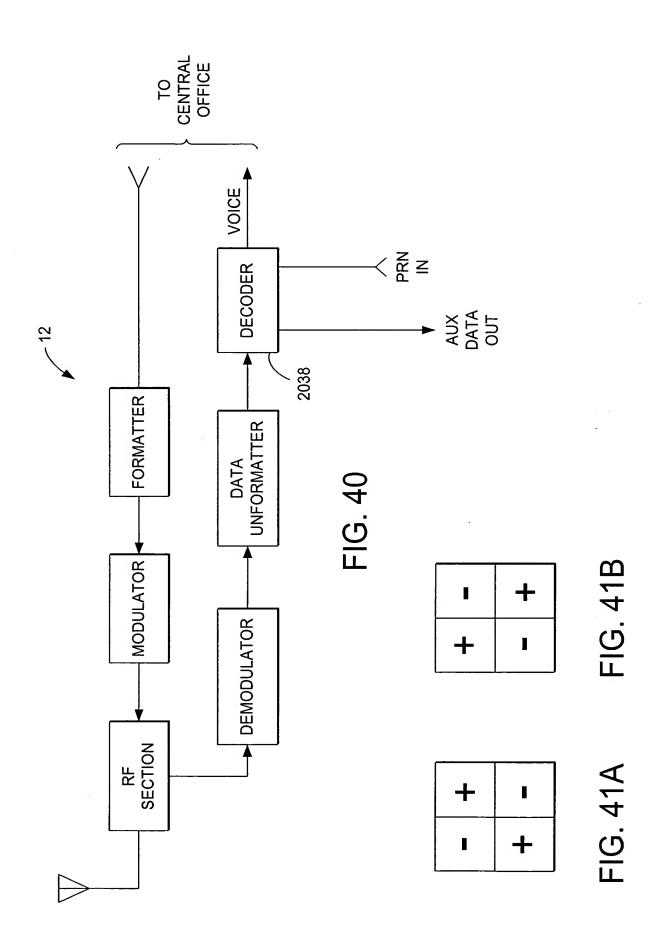
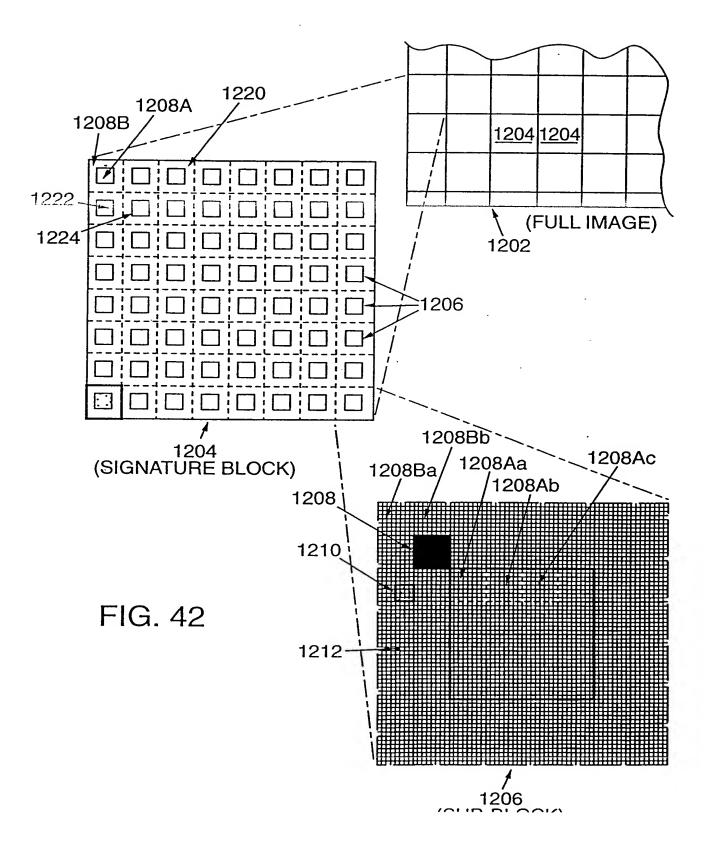
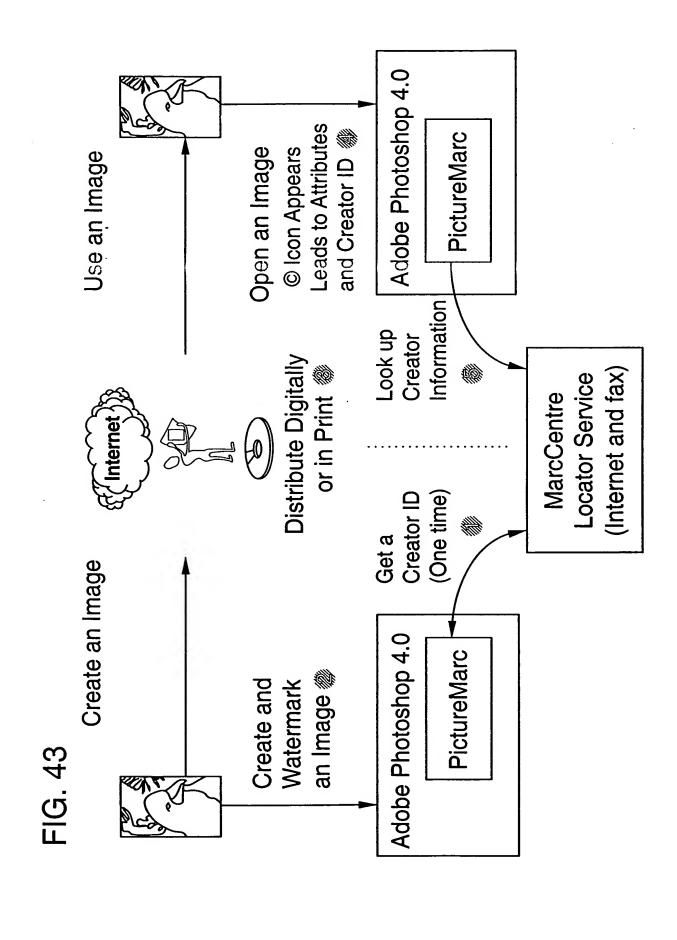
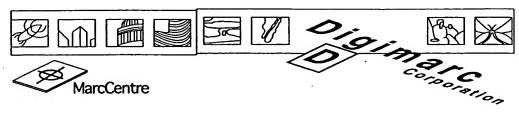


FIG. 39









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FIG. 44

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Company			
Address			
C:4			
City			FIG. 45
State/Province			1 10.40
Zip/Postal Code		••••	
Zip/Fustai Coue	<u></u>		
Country			
Phone Number		······································	
	<u> </u>		
Fax Number			
			•••
Email Address			•
Email Address			
Email Address Your Home Page			
Your Home Page	http://		
Your Home Page You can control how mu	http://	mation is displayed wh	en a
Your Home Page You can control how mu potential customer finds	http:// ich of your contact informyour profile on MarcCer	mation is displayed wh	en a
Your Home Page You can control how mu potential customer finds below to tell us what you Phone Number	http:// ich of your contact informyour profile on MarcCer	mation is displayed wh	en a
Your Home Page You can control how mu potential customer finds below to tell us what you	http:// uch of your contact inform your profile on MarcCen u want people to see.	mation is displayed whatre. Use the selections	en a
Your Home Page You can control how mu potential customer finds below to tell us what you Phone Number	http:// uch of your contact inform your profile on MarcCen u want people to see. Mailing Address	nation is displayed who tre. Use the selections  Email Account	en a
Your Home Page You can control how mu potential customer finds below to tell us what you Phone Number Show	http:// uch of your contact inform your profile on MarcCentu want people to see.  Mailing Address  Show Don't show	nation is displayed whatre. Use the selections  Email Account  Show	en a
Your Home Page You can control how mupotential customer finds below to tell us what your Phone Number Show Don't show	http:// ich of your contact inform your profile on MarcCentu want people to see.  Mailing Address  Show Don't show r mailing lists	nation is displayed whatre. Use the selections  Email Account  Show	en a
Your Home Page You can control how mupotential customer finds below to tell us what your Phone Number Show Don't show Yes, I want to be on you	http:// ich of your contact inform your profile on MarcCentu want people to see.  Mailing Address  Show Don't show r mailing lists	nation is displayed whatre. Use the selections  Email Account  Show	en a
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Card Number	Name Shown on Card	Expiration (MM/YY)	•
When you are satisfied with y Complete" button and continu	-		
sign-up. If you wish to cancel,	-	•	
	Part 1 Complete		FIG. 46
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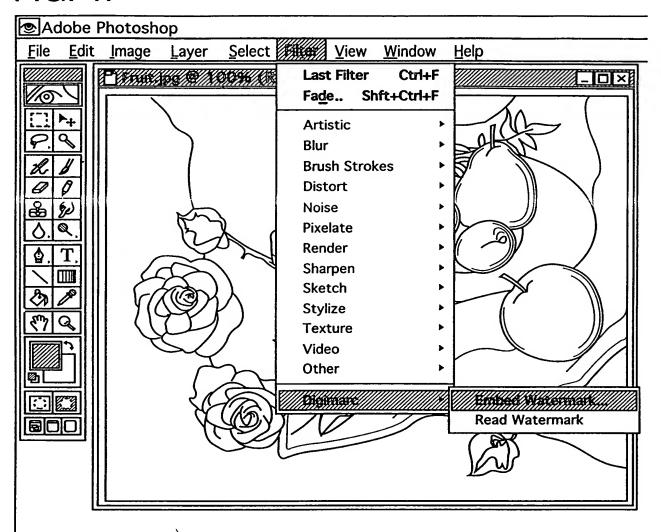
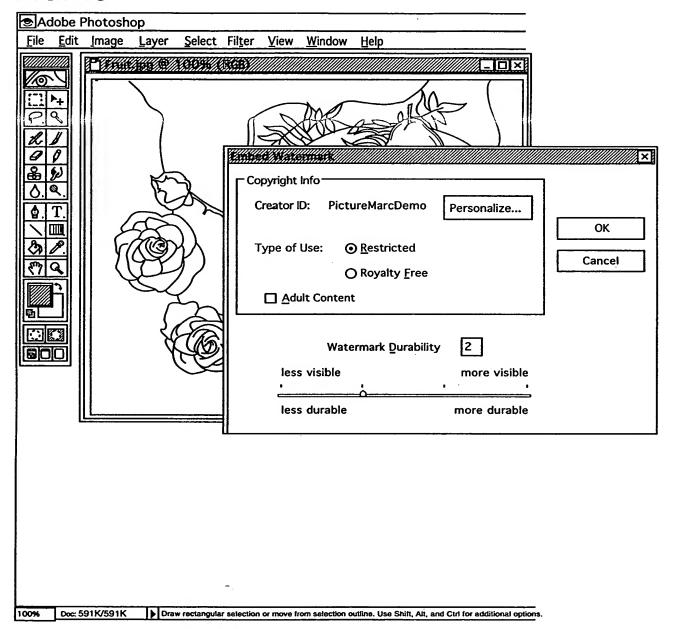


FIG. 48



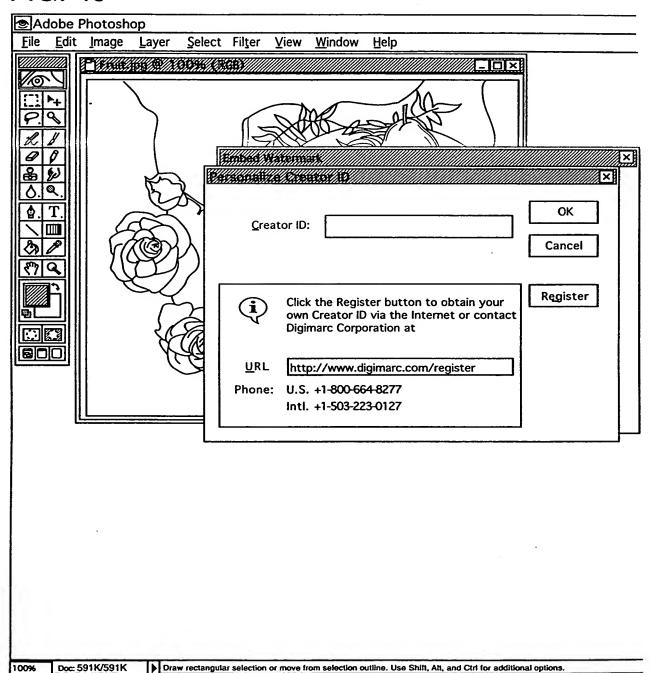
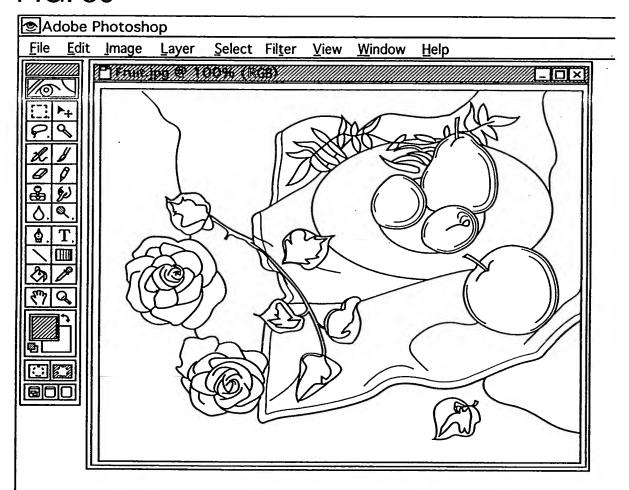


FIG. 50



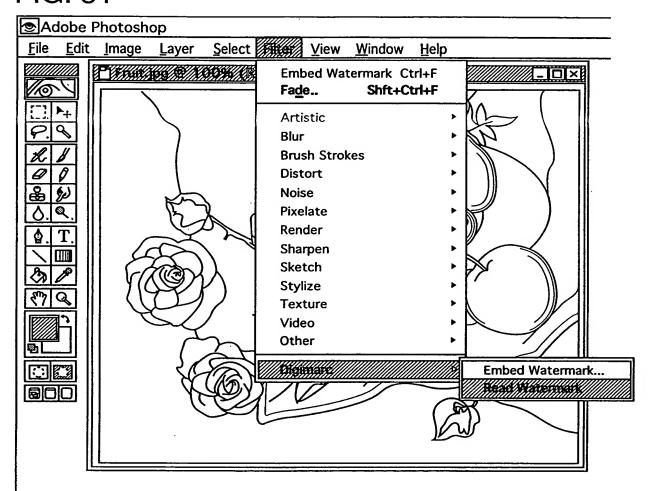
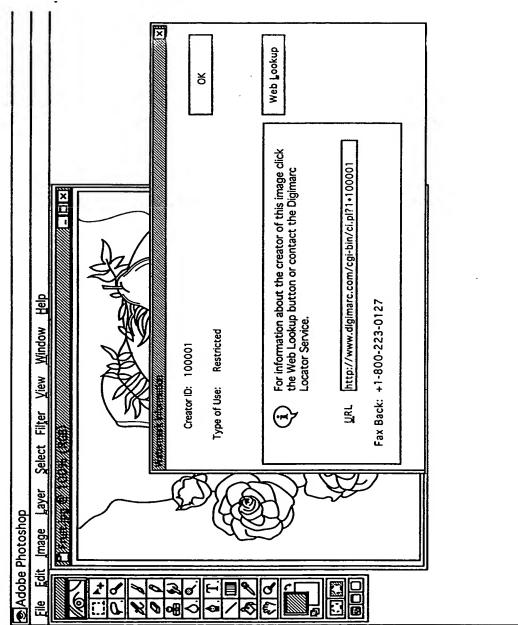
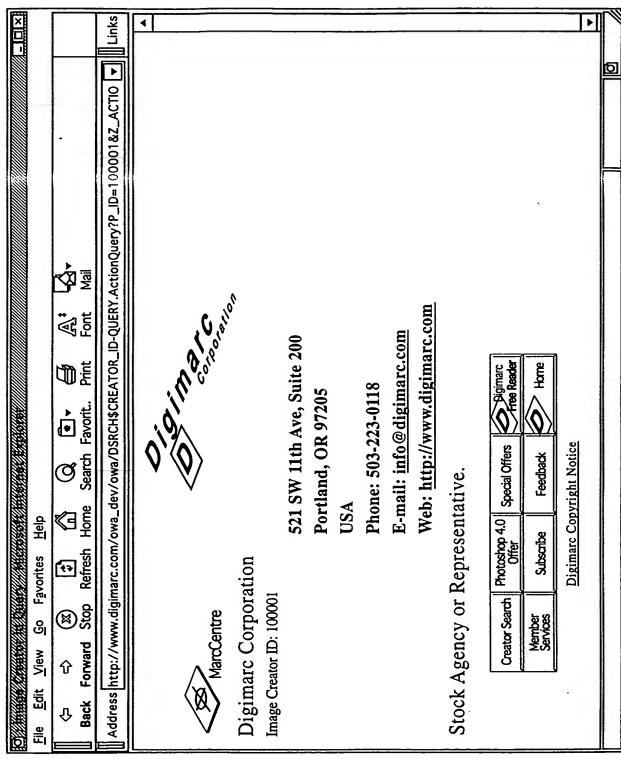


FIG. 52

1)



100% Doc: 591K/591K | | March 1966 | Draw rectangular selection or move from selection outline. Use Shift, Alt, and Cirt for additional options.







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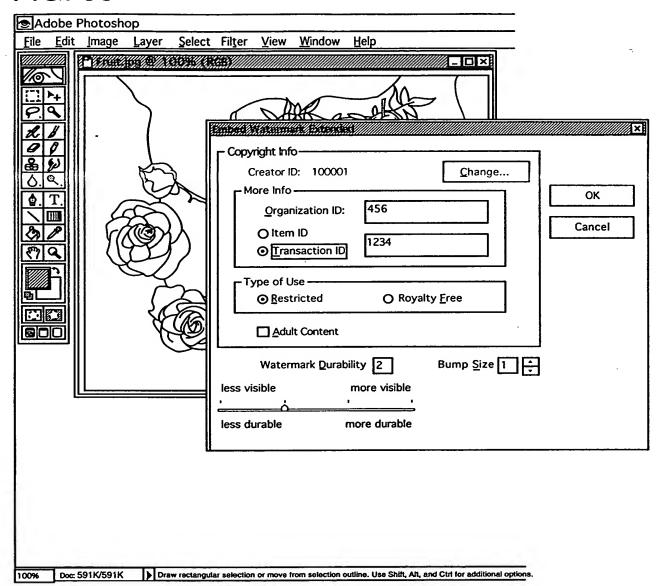
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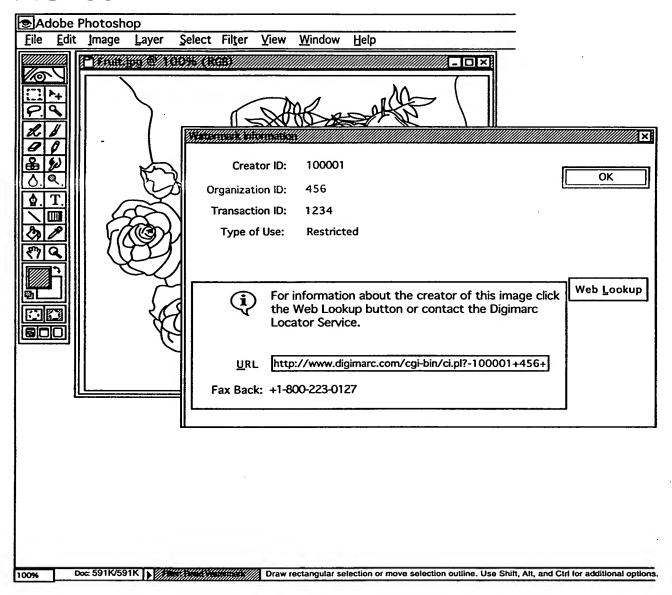
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Read Start Cipboard Viewer FIG. 57
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